Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

# MARKET OUTLOOK REPORT

Volume 1 Number 5

## *BARLEY OUTLOOK FOR 2009-10*

November 6, 2009

Prepared by:
Market Analysis Group
Grains and Oilseeds Division
Food Value Chain Bureau
Market and Industry Services Branch
Agriculture & Agri-Food Canada
www.agr.gc.ca/gaod-dco

Canada

# MARKET OUTLOOK REPORT

Volume 1 Number 5

## *BARLEY OUTLOOK FOR 2009-10*

November 6, 2009

Market Outlook Report

© Her Majesty the Queen in Right of Canada, 2009

Electronic version available at
www.agr.gc.ca/gaod-dco

ISSN 1920-20082X
AAFC No. 10918E

Market Outlook Reports are published by the
Market Analysis Group
Grains and Oilseeds Division
Food Value Chain Bureau
Market and Industry Services Branch
Agriculture & Agri-Food Canada
500-303 Main Street
Winnipeg, Manitoba, Canada R3C 3G7
Telephone: 204-983-8473
Fax: 204-983-5524
Email: bulletin@agr.gc.ca

Director: Steve Lavergne 204-984-5484
Chief: Fred Oleson 204-983-0807

Analyst: Chris Beckman
Phone: 204-984-4929
Fax: 204-983-5524
Email: chris.beckman@agr.gc.ca

Issued also in French under title
*Rapport sur les perspectives du marché*
ISSN 1920-200838
AAFC No. 10918F

# BARLEY OUTLOOK FOR 2009-10

***For 2009-10, Canadian barley production is expected to decrease significantly due to the decline in seeded area and lower yields. Barley usage is expected to fall due to lower feed demand, although demand for malt and food barley is expected to remain stable. Exports of barley will be constrained by increased world supplies and stable world demand. Consequently, prices for feed and malt barley are expected to decline sharply from year ago levels. Over the medium term, barley production is projected to decline moderately for several years before rebounding slowly. This issue of the Market Outlook Report looks at the situation and medium term outlook for barley.***

## BACKGROUND

Barley is a cereal grain derived from the annual grass *Hordeum vulgare*. It is mainly used as animal feed, with smaller volumes used for malting for beer and whisky and in health food. Barley was one of the first crops domesticated in the Near East, at the same time as einkorn and emmer wheat. Beer produced from barley beer is thought to be one of the first drinks developed by Neolithic humans and barley was considered an important crop in ancient Egypt more than 5000 years ago.

Barley is a widely adaptable crop and is popular in temperate areas where it is grown as a summer crop. In tropical areas it is grown as a winter crop. It likes to grow under cool conditions but is not particularly winter hardy.

Barley is grown in about 100 countries with major production centered in the European Union (EU-27), North America, the Black Sea region and Australia. In the EU-27 barley is mostly grown in Germany, France, England, and across the North Sea into Sweden and Norway. Heading east, other major barley growing regions are Turkey and the Black Sea Region which incorporates Russia, Ukraine and Kazakhstan.

In North America most of the barley production occurs in the dark brown and black soil zones located in the northern half of the growing region stretched between the Canadian Shield and the Rocky Mountains of western Canada. In the United States, barley production is concentrated in the western half of the northern plains region. South of the equator, Australia is a major barley producer with winter production concentrated in the moister southern half of the country.

**Did you know?** That a mutation in a single gene is responsible for the transition from two-row to six row barley?

## 2009-10 WORLD SUMMARY

World barley production is expected by the USDA to decline by about 4 per cent, to 147 million tonnes (Mt) due to lower production in the EU-27, Russia and Canada which was partly offset by minor increases in Australia, Morocco, Ukraine, Turkey and Iran. However, supplies of barley are expected to decline only marginally due to the sharp rise in carry-in stocks.

Total consumption of barley is expected to rise by 3 per cent due to higher feed use in the EU-27, India Morocco and Ukraine. World trade in barley is forecast to fall by 7 per cent due to lower exports from Russia and reduced imports by Iran, Saudi Arabia, Syria and other countries. World trade in malting quality barley is forecast by the International Grains Council to increase slightly to about 3.0 Mt. Carry-out stocks of all barley is forecast to fall by about 11 per cent from the previous year but remain well above the 5 year average.

***CANADIAN OUTLOOK***

**Production**
Canadian production of barley is estimated by Statistics Canada to decrease by 22 per cent in 2009-10, to 9.2 Mt, due to a decline in seeded area and reduced yields. Yield and production estimates contain a greater than normal degree of uncertainty due to the abnormal growing conditions during the crop year. A combination of a late spring, sharply lower than normal spring and summer temperatures, a lack of moisture across the western prairies combined with excessive moisture and floods in eastern Manitoba, resulted in slower than normal seeding.

Crop development was further delayed by abnormally cold weather during the summer of 2009 with early seeded crops suffering frost damage. As of June 12, growing degree days to-date were about one-half of normal and almost one-fifth of the crop in Saskatchewan had yet to emerge.

Concern over the quantity and quality of the Canadian barley crop continued during the summer and to the end of August when a record warm September allowed crop development to catch up to slightly behind normal and harvesting to proceed at a rapid pace. With the exception of isolated fields, yields are not expected to be seriously affected by light frost near the end of September. While the grade distribution and volume selected for malt is expected to be near normal levels, the uncertainty surrounding these estimates remains greater. The decline in barley supplies is expected to be moderated by the sharp rise in carry-in stocks.

**Domestic Use**
Domestically, barley is consumed as livestock feed, is processed into malt or is used as a food ingredient for human consumption. For 2009-10, feed, waste and dockage is expected to decline by about 4 per cent due to reduced livestock feeding and increased competition from low grade wheat and increased supplies of dried distillers grains with solubles (ddgs).

**Feed demand to decline**
The demand for barley in livestock rations is expected to fall as the rationalization of the Canadian livestock sector continues. In its September 1 release, CANFAX estimated cattle on feed declined by 8.4 per cent from 2008-09, to 0.63 million head. Compared to two years ago, cattle on feed were down almost 21 per cent. The number of cattle on feed in Canada is expected to decline further for 2009-10, partly as the result of lower prices and the uncertainty surrounding Country of Origin Labeling regulations.

Similarly, Canadian hog numbers may fall to the lowest level in a decade due to ongoing financial losses approaching $55 per pig. The number of pigs taken to the abattoir is expected to rise by 700,000 head, to 21.4 million head. At 11.5 million head, Canada's hog herd will end 2009-10 22 per cent smaller than at its peak in 2005 and the smallest since 1998.

Domestic feeding of barley is also expected to be constrained by competition from slightly higher quantities of low grading, feed-quality wheat, estimated at 3.2 Mt. The combined effects of late seeding, drought in Alberta and Saskatchewan and excessive moisture in Manitoba is expected to result in increased volume of low grading wheat. However, record warm temperatures in September may result in less wheat being downgraded than originally expected.

Barley is also expected to face increased competition from increased supplies of ddgs resulting from the expansion of the ethanol sector in Canada and in the US. In eastern Canada, supplies of ddgs are expected to increase with production capacity for corn-based ethanol estimated at 1,176 million liters per year. In western Canada, the scale up of ethanol production is expected to result in increased availability of wheat and corn based ddgs. Imports of ddgs into Canada are expected to rise slightly from the 0.63 Mt imported in 2008-09.

**Demand stable for malting barley**
For 2009-10, domestic consumption of barley to produce malt is estimated at slightly over 1.0 Mt. Of this slightly under 0.2 Mt of barley in the form of malt is expected to be consumed domestically while over 0.8 Mt of barley in the form of malt is expected to be exported, mainly to the United States and China. This is similar to previous years, the domestic malt industry is considered mature and only minor variability is expected from one year to the next.

**Food demand, small but growing**
Domestic consumption of barley for food is estimated at about 15,000 tonnes for the current crop year. In recent years, there has been a push to develop the market for hulless, i.e., naked, barley and currently several varieties are registered that are suitable for human consumption. Food barley is promoted as a healthy source of soluble and insoluble fiber. As of 2006, in the US, labels on packages of whole grain barley and food made with barley that contain at least 0.75 grams of soluble fiber per serving are now permitted to carry the following claim: "Soluble fiber from foods such as [name of food], as part of a diet low in saturated fat and cholesterol, may reduce the risk of hear disease. A serving of [name of food] supplies [x] grams of the soluble fiber necessary per day to have this effect.

In Canada, the document and application for a generic health claim, "Barley Beta-glucan Soluble Fibre and Reduction of Blood Cholesterol, A Risk Factor for Cardiovascular Disease", was submitted to Health Canada in February 2009.

**Exports Down Slightly**
Canadian barley exports, including malt, are forecast to decrease by 3 per cent. Of this total, feed barley exports are expected to be under 0.1 Mt with Japan expected to be the major customer. Feed barley exports are being constrained by the historically high value of the Canadian dollar, which is trading in a range averaging around US$1=C$1.10 compared to a range of US$1=C$1.50 several years ago. As well, near record production of corn in the US, a good EU-27 barley crop and rapidly expanding grain production in the Black Sea region are constraining feed barley exports.

Exports of malting barley and malt are forecast to remain relatively stable for 2009-10 on steady world demand. World malt barley production is expected to increase but world trade is expected to remain stable so competition is not expected to increase significantly. For malt and malting barley, Canada's major customers are the US and China.

***MAJOR CANADIAN EXPORT MARKETS***

**Japan: Imports Steady**
For 2009-10, Japan is expected to import slightly under 0.2 Mt of barley from Canada with about two-thirds consisting of feed barley and one-third of malting barley. Japan is the worlds 3rd largest importer of barley and domestically barley makes up about 4 per cent of the coarse grains and other ingredients consumed as feed.

In Japan, roughly 80 percent of barley is consumed as feed where it is used in the production of compound and mixed feed for the cattle sector. It is particularly important in feeding beef cattle because it produces high quality beef with the white marbling that Japanese consumers favour. The largest non-feed uses are for the production of shochu, a traditionally distilled liquor, and beer. Other uses include miso (soybean paste) and barley tea. Yearly consumption of barley is estimated to be around 1.6 Mt but demand for barley is expected to decrease over the next few years as the cattle population continues to shrink.

**China: Imports of Canadian Barley to Rise**
For 2009-10, Chinese imports of Canadian malting barley are forecast at 0.3 Mt, an increase of 40 per cent from 2008-09. In China, barley is mostly used for brewing but domestic barley production is inadequate to supply the expanding brewing industry. For 2008, the USDA estimated Chinese beer production at 41 million kiloliters, a 5 per cent increase from 2007. The sector's total demand for malting barley is estimated at 4.5 Mt annually.

For 2009-10, Chinese imports of barley are forecast at 1.5 Mt, up marginally from the previous year. The recent sharp declines in international barley prices is expected to mitigate China's practice of substituting feed barley for malting barley in beer production with a subsequent impact on quality. Due to the high barley prices in recent years, brewers had reduced the use of malting barley and lowered the wort density in efforts of marketing beer with a lighter taste. Other ingredients frequently used by brewers as a substitute for malting barley include rice, wheat and syrup.

**United States: Stable Imports Despite Lower Output**
For 2009-10, the United States is forecast to import 0.6 Mt of mostly Canadian barley, unchanged from 2008-09, but sharply higher than the five year average of under 0.5 Mt. Of this, about 90 per cent is expected to be malting barley and about 10 per cent is expected to be used for feed or other uses.

For 2009-10, US barley production is forecast to fall to slightly under 5.0 Mt versus 5.2 Mt the previous year as a drop in seeded area was partly offset by a small decline in abandonment and higher yields. The area seeded to barley fell to 1.4 million hectares, the second lowest level in recent years. Abandonment fell marginally from 2008-09 to 180,000 hectares resulting in a harvested area of slightly under 1.3 million hectares while barley yields increased by 14 per cent, to a record 3.9 tonnes per hectare due to the cool and moist summer.

Total US barley usage is estimated at 5.0 Mt f or 2009-10, a marginal increase from 2008-09. Food, seed and industrial use is forecast to decrease by 10 per cent to 3.7 Mt while feed and residual usage falls by 10 per cent to 1.3 Mt. Exports are forecast to rise slightly to 0.3 Mt. Carry-out stocks are forecast to decline by about 10 per cent, to 1.7 Mt.

## *EXPORT COMPETITION*

**Australia: Exports Stable, Production Up.**
For 2009-10, production of barley is expected to increase by slightly under 10 per cent due to improved moisture conditions. The area seeded to barley has increased recently because as a shorter season crop it is better able to withstand drought. Australia is expected to consume about half of its crop domestically while exporting the other half.

Australian exports of barley are forecast to remain stable for 2009-10 at about 3.5 Mt. This is significantly above the drought-reduced levels of 2006-07, but sharply lower than the 5.2 Mt exported in 2005-06. Australia's major market for barley is China and Japan where it is a major competitor against Canada. Exports of malt barley are estimated at 1.2 Mt while exports of feed barley are forecast to be 2.3 Mt. Carry-out stocks are forecast to rise slightly to 2.5 Mt, about 15 per cent above the five year average.

In early 2009, the state of Western Australia announced its intention to dismantle its licensing arrangements for barley, lupins and canola. The announcement follows a recent review of the "Grain Marketing Act, 2002" which recommended a deregulation of grain exports. The WA licensing system for exporting barley, lupins and canola was introduced in 2002 to replace single desk marketing of those products.

**Russia, Ukraine, Kazakhstan: Exports, Production to decline.**
For 2009-10, the production of barley in the region colloquially referred to as the Black Sea region is forecast to decrease by about 21 per cent. This is almost all due to a sharp fall in Russian output from the modern day record of 23.1 Mt established in 2008-09. However, production will still be close to 2007-08 levels of 15.7 Mt for Russia. Exports of barley are forecast to fall by 17 per cent to 8.3 Mt, as result of tighter Russian supplies. However, Ukraine is currently forecast to maintain its export level of 6.0 Mt, making it the world's largest exporter of barley, although it has suffered a series of economic shocks and credit crunch.

The Black Sea region has emerged as the world's most aggressive exporter of barley and feed quality grains. Given its location on the Black Sea it possesses a competitive advantage in servicing Saudi Arabia feed barley demand. However, the pace of exports remains sensitive to domestic policies. For example, Ukraine switched from restricting grain exports in 2006-07 and 2007-08 to fight food inflation to encouraging exports in 2008-09 to support domestic prices. Problems with refunding the value added tax continue and for 2009-10 the government of Ukraine plants to continue interventions into the grain market. Ukraine continues to remain sensitive to possible domestic food price increases sparked by the higher grain prices. Similarly, Russia has undertaken several measures to provide farmers with favorable terms for fuel and fertilizer purchases.

**The European Union: Production Down, Exports Up**
For 2009-10, the production of barley in the EU-27 is forecast to fall by 7 per cent due to a slight drop in seeded area and a significant drop in yields. Seeded area fell to 14.2 million hectares from 14.6 million hectares in 2008-09, while yields are expected to fall by 0.2 tonnes per hectare to 4.3 tonnes per hectare. The European Union continues to be the world's largest producer of barley, accounting for about 43 per cent of the world barley crop in 2009-10.

Despite the forecasted drop in output for 2009-10, EU-27 exports are forecast to rise to 3.0 Mt, a 9 per cent increase from last year. Of this about 2.6 Mt are expected to be feed barley while 0.4 Mt is malting barley. Given its location on the Atlantic Oceans and Mediterranean Sea, the EU-27 has a competitive advantage in marketing barley into North Africa and Middle East countries compared to Canada.

The recent decline in world barley prices has sparked speculation that European producers may place barley into intervention. If this occurs and world prices for barley continue low, the EU-27 may resume paying export subsidies to clear out stocks. If this occurs, world barley prices can be expected to decline further.

## *PRICE OUTLOOK*

**Domestic Prices to fall**
For 2009-10, the Canadian prices for barley is forecast to fall sharply under pressure from the strong Canadian dollar, record US corn supplies, large EU-27 production and stable world supplies. The cash price of feed barley, in-store Lethbridge is forecast to fall to CAN$155 a tonne compared to CAN$179 a tonne for 2008-09.

The October Pool Return Outlook (PRO) for Number 1 Canada Western Pool A Barley is $145 a tonne versus $168 a tonne for the last crop year. The October PRO for Select Canadian Western 2 Row Barley is $208 a tonne compared to the 2008-09 level of $314 a tonne. The October PRO for Select Canadian Western 6 Row Barley is $190 a tonne for this crop year compared to $294 a tonne for 2008-09.

**Medium Term Outlook.**
Over the medium term, the area seeded and harvested for barley in Canada is expected to decline slowly and bottom out sometime around 2013, at which point area starts to rise slowly until returning to the current five year average. Yields are projected to rise by about 0.01 tonnes per hectare per year rising to 3.33 tonnes per hectare by 2018. Consequently, production of barley is expected to fall in 2010 and hold steady or trend downwards for several years before starting to rebound. Production is projected to reach 11.7 Mt by 2018.

Feed demand for barley is expected to be constrained by the ongoing liquidation of the Canadian cattle and hog inventories. Feed use is projected to remain below 7.5 Mt annually as it faces stiff competition from corn and ddgs for inclusion into livestock diets. Demand for malting barley is projected to rise slightly with domestic processing continuing stable and exports rising at a slow and steady pace to about 3.0 Mt by 2018. Prices are projected to remain under pressure over the medium term due to large US corn and ddgs supplies and competition from the Black Sea Region, the EU-27 and Australia.

**The FAO Challenge**
In their outlook to 2050, the Food and Agricultural Organization (FAO) observes that by 2050 agriculture faces the challenge of feeding one-third more people (2.3 billion) and to produce feedstocks for a growing bioenergy market while contributing to economic development, becoming more sustainable and adapting to climate change. Consequently, the FAO states that world food production will need to rise by 70 per cent from the average of 2005/07 crop years by 2050.

To meet this challenge annual cereal production will have to grow by a billion tonnes, eighty percent of which is projected to be achieved through higher yields and increased cropping intensity. To this end, if barley was to be part of the solution to satisfying an increased demand, yields will have to rise significantly over the next forty years.

Since 1960, barley yields in Canada have increased by 93 per cent from 1.5 tonnes per hectare to 2.9 tonnes per hectare in 2009-10. By comparison, the yields of corn in the United States have increased by 196 per cent, from 3.4 tonnes per hectare in 1960, to 10.6 tonnes per hectare for 2009-10. Using the rate of growth specified in AAFC's Medium Term Baseline and the USDA's Medium Term Outlook, yields for barley and corn were projected out to 2018. By then, barley yields will have increased to 3.33 tonnes per hectare while corn yields are projected at 10.98 tonnes per hectare.

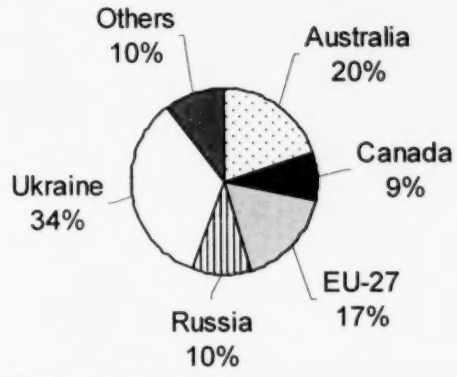
Based on these results, barley yields need to increase at a faster pace to satisfy the FAO challenge. For corn, the expected rate of growth in yields of 1.01 per cent will result in corn yields of close to 15 tonnes per hectare by 2050. Based on the current harvested area of 32.4 million hectares, this will result in a US production of 486 million tonnes, 48 per cent above 2009-10 output.

## WORLD: BARLEY SUPPLY AND DISPOSITION

| | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10f | 2010-11f |
|---|---|---|---|---|---|---|
| | | | million tonnes | | | |
| Carry-In Stocks | 32.6 | 28.0 | 21.3 | 19.7 | 30.4 | 30.4 |
| Production | | | | | | |
| Australia | 9.5 | 4.3 | 7.2 | 7.0 | 7.8 | 7.5 |
| Canada | 11.7 | 9.6 | 11.0 | 11.8 | 9.2 | 8.8 |
| EU-27 | 54.8 | 56.2 | 57.5 | 65.6 | 61.5 | 58.0 |
| Russia | 15.8 | 18.1 | 15.7 | 23.1 | 18.0 | 15.0 |
| Turkey | 7.6 | 7.5 | 6.0 | 5.6 | 6.0 | 5.5 |
| Ukraine | 9.0 | 11.4 | 6.0 | 12.6 | 12.0 | 11.0 |
| Others | 27.8 | 29.4 | 29.6 | 28.2 | 32.8 | 30.0 |
| Total Production | 136.2 | 136.5 | 133.0 | 153.9 | 147.3 | 135.8 |
| **Total Supply** | **168.8** | **164.5** | **154.3** | **173.6** | **177.7** | **166.2** |
| Trade | 17.5 | 14.6 | 18.5 | 19.0 | 17.6 | 16.0 |
| **Total Use** | **140.8** | **143.2** | **134.5** | **143.2** | **147.3** | **141.2** |
| Carry-Out Stocks | 28.0 | 21.3 | 19.7 | 30.4 | 30.4 | 25.0 |
| Stocks to Use Ratio | 19.9% | 14.9% | 14.6% | 21.2% | 20.6% | 17.7% |

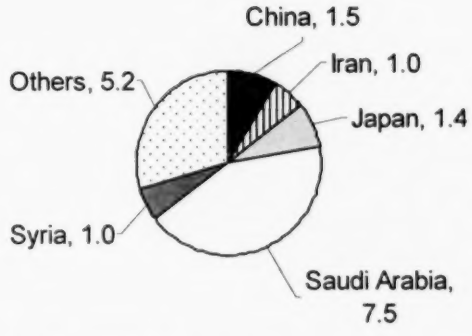
Source: United States Department of Agriculture, AAFC for 2010-11f

## 2009-10F: WORLD BARLEY EXPORTS




Source: United States Department of Agriculture

## 2009-10F: WORLD BARLEY IMPORTS: Mt

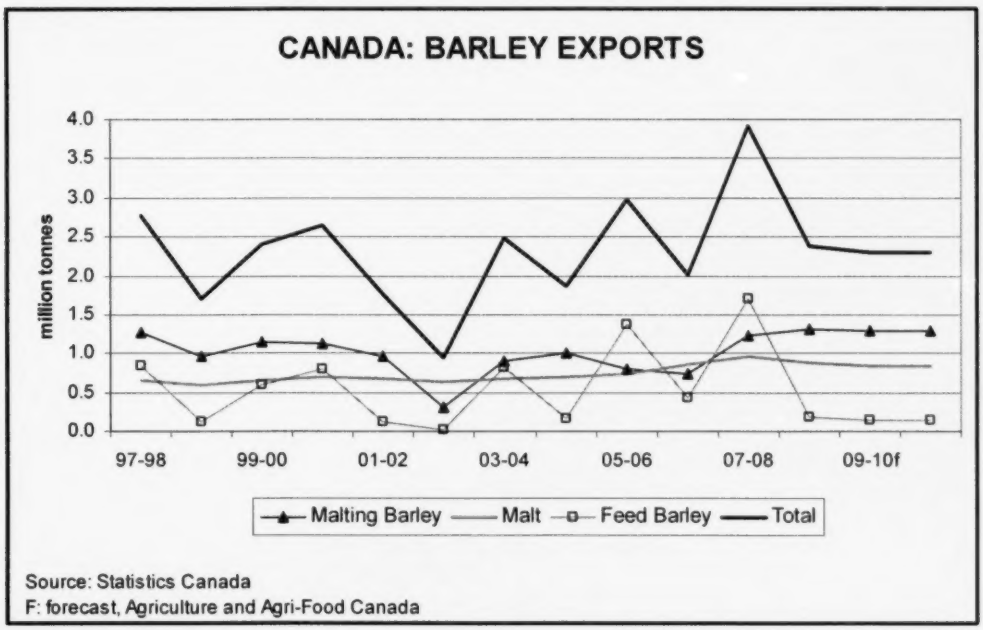



Source: United States Department of Agriculture

## CANADA: BARLEY SUPPLY AND DISPOSITION

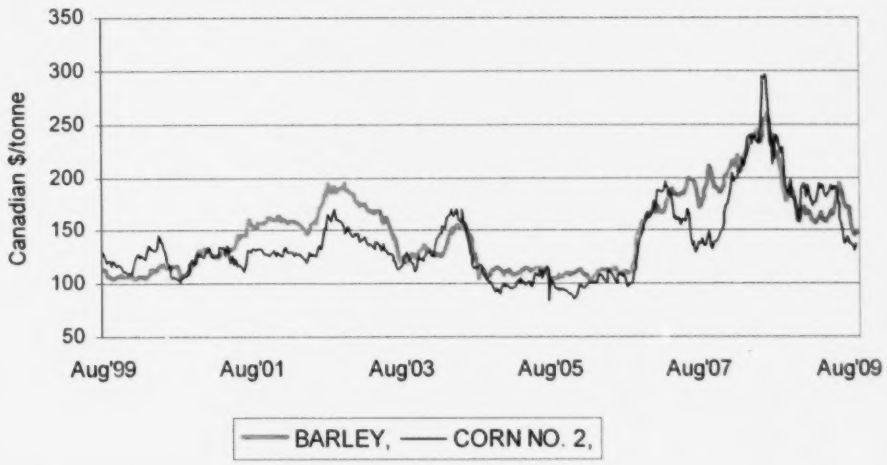
| | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10f | 2010-11f |
|---|---|---|---|---|---|---|
| | | | million tonnes | | | |
| Carry-In Stocks | 3.5 | 3.3 | 1.5 | 1.6 | 2.8 | 1.8 |
| Production | 11.7 | 9.6 | 11 | 11.8 | 9.2 | 8.8 |
| Imports | 0 | | 0 | 0 | 0 | 0 |
| **Total Supply** | **15.2** | **12.9** | **12.5** | **13.4** | **12** | **10.6** |
| | | | | | | |
| Food and Industrial Use | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Feed, Waste and Dockage | 8.4 | 8.8 | 6.6 | 7.7 | 7.4 | 6.2 |
| Exports | 3 | 2 | 3.9 | 2.4 | 2.3 | 2.3 |
| Other | 0.3 | 0.4 | 0.2 | 0.3 | 0.3 | 0.3 |
| **Total Use** | **11.9** | **11.4** | **10.9** | **10.6** | **10.2** | **9.0** |
| Carry-Out Stocks | 3.3 | 1.5 | 1.6 | 2.8 | 1.8 | 1.6 |
| Stocks to Use Ratio | 27.7% | 13.2% | 14.7% | 26.4% | 17.6% | 17.8% |

Source: Statistics Canada
f: Agriculture and Agri-Food Canada



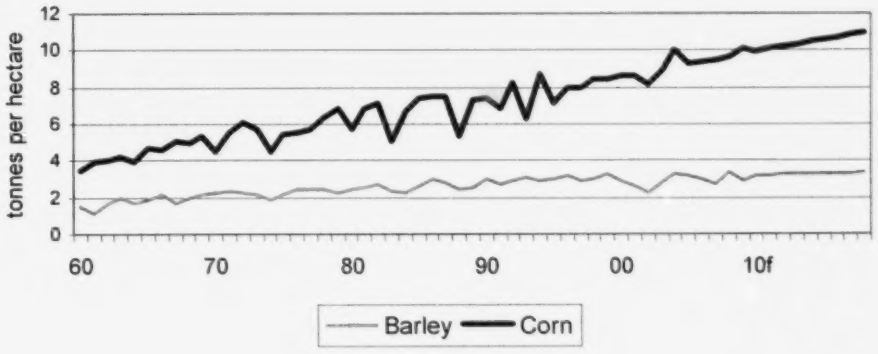

Source: Statistics Canada
F: forecast, Agriculture and Agri-Food Canada

## PRICES: CHICAGO BOARD OF TRADE CORN VERSUS LETHBRIDGE BARLEY




Source: International Commodity Exchange, CME Group

## YIELDS: CANADIAN BARLEY VS US CORN




Source: Statistics Canada, United States Department of Agriculture